

SWITCHING METHOD IN A MULTI-THREADED PROCESSOR

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ABSTRACT OF THE DISCLOSURE

5 A processor includes logic for attaining a very fast exception handling
functionality while executing non-threaded programs by invoking a multithreaded-
type functionality in response to an exception condition. The processor, while
operating in multithreaded conditions or while executing non-threaded programs,
progresses through multiple machine states during execution. The very fast exception
handling logic includes connection of an exception signal line to thread select logic,
10 causing an exception signal to evoke a switch in thread and machine state. The switch
in thread and machine state causes the processor to enter and to exit the exception
handler immediately, without waiting to drain the pipeline or queues and without the
inherent timing penalty of the operating system's software saving and restoring of
registers.